

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Kazuya OTA, Akikazu TANIMOTO, Tsuneyuki HAGIWARA,
Hideki KOMATSUDA and Takashi MORI

New Rule 1.53(b) Continuation of Application No. 09/396,349

Filed: May 2, 2001

Docket No.: 104313.01

For: APPARATUS AND METHOD FOR PATTERN EXPOSURE
AND METHOD FOR ADJUSTING THE APPARATUS

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please replace claims 3,4 and 15-17 as follows:

3. (Amended) A method according to claim 1, wherein said exposure apparatus is provided with projection optics consisted of reflective components for focusing illumination light exiting from a mask so as to project a pattern fabricated on said mask on a substrate base, wherein adjustments of optical components in at least a part of said illumination optics and said projection optics are performed using said non-exposure light emitted from said wide bandwidth light source.

4. (Amended) A method according to claim 1, wherein said wide bandwidth light source generates light having wavelengths in an extreme ultraviolet range as said

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exposure light, and at least one of ultraviolet light or visible light as non-exposure light, wherein said illumination optics consists of reflective optical components.

15. (Apparatus) An apparatus according to claim 13, wherein said illumination optics and said projection optics are consisted of reflective optical components, and said apparatus is provided with stage system for moving a mask and a substrate base in a given direction; and a control device for scanning said mask and said substrate base concurrently with respect to projection optics, so as to imprint a mask pattern on said substrate base.

16. (Amended) An apparatus according to claim 12, wherein said wide bandwidth light source generates extreme ultraviolet light as said exposure light and generates at least one of ultraviolet light or visible light as said non-exposure light; and

when using said non-exposure light generated from said wide bandwidth light source, a gaseous substance is supplied to an optical path of said non-exposure light, and when using said exposure light generated from said wide bandwidth light source, an optical path of said exposure light is enclosed in an essentially evacuated state.

17. (Amended) An apparatus according to claim 12, wherein a wavelength selection device is provided for transmitting one of said exposure light and said non-exposure light, emitted from said wide bandwidth light source, towards illumination optics.

REMARKS

Claims 1-28 are pending. By this Amendment, claims 3,4 and 15-17 are amended to eliminate multiple dependencies. No new matter is added.

The attached Appendix includes marked-up copies of each rewritten claim
(37 C.F.R. 1.121(c)(ii)).

A second Preliminary Amendment is forthcoming. The Examiner is requested to defer examination until receipt of the second Preliminary Amendment. The Examiner is also requested to contact Applicants' representative listed below if the second Preliminary Amendment has not been received.

Respectfully submitted,



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Attachment:
Appendix

Date: May 2, 2001

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APPENDIX

Changes to Claims:

The following are marked-up versions of the amended claims:

3. (Amended) A method according to ~~one of~~ claims 1-~~or~~ 2, wherein said exposure apparatus is provided with projection optics consisted of reflective components for focusing illumination light exiting from a mask so as to project a pattern fabricated on said mask on a substrate base, wherein adjustments of optical components in at least a part of said illumination optics and said projection optics are performed using said non-exposure light emitted from said wide bandwidth light source.

4. (Amended) A method according to ~~one of~~ claims 1-~~or~~ 2, wherein said wide bandwidth light source generates light having wavelengths in an extreme ultraviolet range as said exposure light, and at least one of ultraviolet light or visible light as non-exposure light, wherein said illumination optics consists of reflective optical components.

15. (Apparatus) An apparatus according to ~~one of~~ claims 13-~~or~~ 14, wherein said illumination optics and said projection optics are consisted of reflective optical components, and said apparatus is provided with stage system for moving a mask and a substrate base in a given direction; and a control device for scanning said mask and said substrate base concurrently with respect to projection optics, so as to imprint a mask pattern on said substrate base.

16. (Amended) An apparatus according to ~~one of~~ claims 12-~~or~~ 14, wherein said wide bandwidth light source generates extreme ultraviolet light as said exposure light and generates at least one of ultraviolet light or visible light as said non-exposure light; and when using said non-exposure light generated from said wide bandwidth light source, a gaseous substance is supplied to an optical path of said non-exposure light, and

when using said exposure light generated from said wide bandwidth light source, an optical path of said exposure light is enclosed in an essentially evacuated state.

17. (Amended) An apparatus according to ~~one of~~ claims 12 or 14, wherein a wavelength selection device is provided for transmitting one of said exposure light and said non-exposure light, emitted from said wide bandwidth light source, towards illumination optics.

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